1100 Air Quality Management Section

1144 Control of Stationary Generator Emissions

~~01/11/2006~~XX/XX/2011

1.0 General

1.1 Purpose. The purpose of this regulation is to ensure that emissions of nitrogen oxides (NO_x), nonmethane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), and carbon dioxide (CO_2) from stationary generators in the State of Delaware do not adversely impact public health, safety, and welfare.

1.2 Applicability.

1.2.1 This regulation applies to new and existing, emergency and distributed, stationary generators, except for:

1.2.1.1 a generator covered by a permit which imposes a NO_x emission limitation established to meet Best Available Control Technology (BACT) or Lowest Achievable Emission Rate (LAER);

1.2.1.2 an emergency generator located on a residential property where no commercial or industrial activity is carried on, and operated solely to provide emergency electric power to the domestic residence and structures on that property housing no more than three families;

1.2.1.3 a generator which is mobile;

1.2.1.4 a generator with a standby power rating of 10 kW or less; or

1.2.1.5 existing, emergency, stationary generators installed at the stations of the member companies of the Delaware Volunteer Firemen's Association (DVFA), listed in 9.0 of this regulation. However, the provision of 1.2.2 of this regulation applies to the generators at the stations listed in 9.0 of this regulation.

1.2.2 On or after January 11, 2006, a new or existing, stationary generator installed at any of the stations of the member companies of the Delaware Volunteer Firemen's Association, listed in 9.0 of this regulation, shall only operate as an emergency generator.

1.2.3 The requirements of this regulation are in addition to all other applicable State and Federal requirements.

1.2.4 Any stationary generator which is moved from one location to another in an apparent attempt to circumvent the residence time requirement of 12 consecutive months shall not be included within the category of "mobile" as set out in 1.2.1.3 and the owner and operator of the unit shall comply with the requirements of this regulation for stationary generators.

1.3 Dates

1.3.1 The owner of a new stationary generator shall submit the information required in 1.4.1 and 1.4.2 of this regulation and comply with the requirements of this regulation by the date of installation.

1.3.2 The owner of an existing stationary generator shall submit the information required in 1.4.1 and 1.4.2 of this regulation no later than April 11, 2006.

1.3.2.1 If the generator is to be classified as an emergency generator, the owner shall comply with the requirements of this regulation by April 11, 2006.

1.3.2.2 If the generator is to be classified as a distributed generator, and is subject to 3.2.1.1 of this regulation, the owner shall comply with the requirements of this regulation by April 1, 2007. The owner may request an extension of this compliance date, up to one year, if the owner demonstrates to the Department that the additional compliance time is needed, based upon the requirements of 1.3.4 of this regulation.

1.3.2.3 If the generator is to be classified as a distributed generator, and is subject to 3.2.1.2 of this regulation, the owner shall comply with the requirements of this regulation by April 11, 2006.

1.3.3 If a generator is to be reclassified from an emergency generator to a distributed generator, or vice versa, the owner of a stationary generator shall submit to the Department a letter stating that the generator is to be reclassified, and the owner shall comply with the requirements of this regulation before this reclassification.

1.3.4 The owner of an existing, distributed generator may request, and the Department may grant, an extension of the April 1, 2007 compliance date, up to one (1) year, if the owner demonstrates to the Department's satisfaction that additional compliance time is necessary by providing an analysis to the Department which:

1.3.4.1 details the economical or technological reasons, or both, for the extension request; and

1.3.4.2 demonstrates that Delaware's attainment of the National Ambient Air Quality Standards for the 8-hour ozone, or fine particulate matter, will not be delayed due to the generator's delayed compliance.

1.3.5 Both the owner of a stationary generator and a curtailment service provider which enter into a contract for a generator to participate in a voluntary demand-reduction program or any other interruptible power supply arrangement shall submit the information required in 1.4.3 of this regulation by the following dates:

1.3.5.1 no later than 30 days after the date upon which the contract is signed, if the contract is signed on or after XX XX, 2011; or

1.3.5.2 no later than [*30 days after effective date*], if the contract is signed before XX XX, 2011.

1.4 Initial Notification.

1.4.1 The owner of a stationary generator shall submit to the Department the following information:

1.4.1.1 the generator owner's name and telephone number;

1.4.1.2 the physical address where the generator is installed, or will be installed;

1.4.1.3 a description of the generator including the make, model number, and serial number;

1.4.1.4 the year of manufacture for the generator;

1.4.1.5 the standby power rating or the prime power rating for the generator, or both power ratings if both are known; and

1.4.1.6 the date of installation for existing generators, or the expected date of installation for new generators.

1.4.2 The owner of a stationary generator shall submit to the Department a letter stating whether the generator is to be classified as an emergency generator or a distributed generator.

1.4.3 On and after XX XX, 2011, both the owner of a stationary generator and the curtailment service provider who enter, or have entered, into a contract for a generator to participate in a voluntary demand-reduction program or any other interruptible power supply arrangement, shall submit to the Department the following information:

1.4.3.1 the name of the voluntary demand-reduction program or other interruptible power supply arrangement, and company or organization operating the program, in which the generator will be participating;

1.4.3.2 the date upon which the contract was signed, the date upon which the generator will begin participating in the program, and the date (if known) which the generator will stop participating in the program;

1.4.3.3 the expected annual hours the generator will operate each year when participating in the program;

1.4.3.4 the name, address, and telephone number of the curtailment service provider, as well as a contact name if the curtailment service provider is an organization or company;

1.4.3.5 the generator owner's name, address, and telephone number;

1.4.3.6 the physical address where the generator is installed, or will be installed;

1.4.3.7 a description of the generator including the make, model number, and serial number;

1.4.3.8 the year of manufacture for the generator;

1.4.3.9 the rated engine capacity (in horsepower), the standby power rating or the prime power rating for the generator (in kilowatts), or both power ratings if both are known; and

1.4.3.10 the date of installation for an existing generator, or the expected date of installation for a new generator.

2.0 Definitions

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The following words and terms, when used in this regulation, shall have the following meanings:

"Biodiesel" means a renewable fuel for diesel engines derived from natural oils like soybean oil, and which meets the specifications of ASTM D ~~6751-03a~~6751-11a, "Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels," ASTM International, hereby incorporated by reference.

"Biodiesel Blend" means a blend of biodiesel and diesel fuel, designated BXX, where XX represents the volume percentage of biodiesel fuel in the blend. Pure biodiesel is designated as B100.

"Combined heat and power" or **"CHP"** means a generator that sequentially produces both electric power and thermal energy from a single source, where the thermal energy is wholly or partly used for either industrial processes or other heating or cooling purposes.

"Combustion turbine" means an internal combustion engine in which expanding gases from the combustion chamber drive the blades of a turbine to generate mechanical energy in the form of a rotating shaft.

"Commercial poultry producing premises" means any location in the State of Delaware where live, commercial poultry (i.e., poultry wholly owned by a corporate enterprise that controls the entire growing cycle of the birds, from the breeder flock to the processing plant) is kept.

"Curtailment service provider" or **"CSP"** means an independent company, utility, other market participant, or system operator (e.g., Delmarva Power, Delaware Electric Cooperative, PJM, etc.) which enters into a contract with end-use customers in order for the end-user to participate in a voluntary demand-reduction program or any other interruptible power supply arrangement, and administers such a program for the end-user.

"Department" means Department of Natural Resources and Environmental Control as defined in 29 **Del.C.** Ch 80, as amended.

"Design system efficiency" means for CHP, the sum of the full load design thermal output and electric output divided by the heat input.

"Diesel fuel" means any fuel sold in any state or Territory of the United States and suitable for use in diesel motor vehicles, diesel motor vehicle engines, or diesel nonroad engines, and which is commonly or commercially known or sold as diesel fuel.

"Digester gas" means gas generated by the anaerobic digestion of organic wastes, which include, but are not limited to, livestock manure, industrial wastewater, or food processing waste.

"Distributed generator" means a stationary generator that may be used during an emergency, during testing, and for maintenance purposes, as well as for any other purpose at times other than during an emergency.

"Emergency" means:

- an electric power outage due to: a failure of the electrical grid; on-site disaster; local equipment failure; or public service emergencies such as flood, fire, natural disaster, or severe weather conditions (e.g., hurricane, tornado, blizzard, etc.); or

- when there is a deviation of voltage or frequency from the electrical provider to the premises of 3% or greater above, or 5% or greater below, standard voltage or frequency.

"Emergency generator" means a stationary generator used only during an emergency, during testing, and for maintenance purposes. ~~An emergency generator may not be operated in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator (e.g., Delmarva Power, Delaware Electric Cooperative, PJM, etc.).~~

"Existing" means a generator which is not new. An existing generator shall not be considered new if it is relocated and reinstalled on the same property, nor if it is reclassified from an emergency generator to a distributed generator or vice versa.

"Gaseous fuel" means a fuel which is neither solid nor liquid, and includes but is not limited to natural gas, propane, landfill gas, waste gas, and anaerobic digester gas.

"Generator" means an internal combustion engine, except for a combustion turbine, and associated equipment that converts primary fuel (including fossil fuels and renewable fuels) into electricity, or electricity and thermal energy. Use of the term "generator" in this regulation shall refer to any and all generators subject to the requirements of this regulation unless the type of generator being referred to is otherwise specified.

"Installation" and **"install"** mean:

- for generators which are not required to obtain a permit, the date upon which the emplacement of a generator is commenced; or
- for generators which are required to obtain a permit, the date upon which the owner has all necessary preconstruction approvals or permits and either has:
  - begun, or caused to begin, a continuous program of actual on-site emplacement of the generator, to be completed within a reasonable time; or
  - entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner, to undertake a program of actual emplacement of the generator to be completed within a reasonable time.

"Landfill gas" means gas generated by the decomposition of organic waste deposited in a landfill (including municipal solid waste landfills) or derived from the evolution of organic compounds in the waste.

"Maintenance" means the recurrent, periodic, or scheduled work necessary to repair, prevent damage, or sustain existing components of a generator or any ancillary equipment associated with its use.

"Mobile" means a generator powered by an internal combustion engine that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as converting primary fuel into electricity, or electricity and thermal energy); is intended to be propelled while performing its function; or that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another (i.e., a generator which is not stationary).

"New" means a generator which is installed or repowered on or after January 11, 2006.

"Owner" means the owner of, or person responsible for, a generator.

"Operator" means the owner, person, or organization, which is directly responsible for the startup and shutdown of a generator and includes those capable of startup or shutdown of a unit by remote, or who cause or require the use of a generator through a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator.

"Power to heat ratio" means, for a CHP unit, the design electrical output divided by the design recovered thermal output in consistent units.

"Prime power rating" means the maximum amount of power a generator is capable of supplying during continuous duty, as specified by the manufacturer.

"Repower" means the replacement of the internal combustion engine of a generator with another internal combustion engine.

"Standby power rating" means the amount of power a generator is capable of supplying during a power outage for the duration of the interruption, as specified by the manufacturer.

"Stationary" means a generator powered by an internal combustion engine which is not propelled or intended to be propelled while performing its function, that is used either in a fixed application, or in a portable (or transportable) application in which the engine will stay at a single location on a property (which includes the land, the buildings, and all improvements thereon) for more than 12 consecutive months (i.e., a generator which is not mobile). ~~Any stationary generator which is moved from one location to another in a deliberate attempt to circumvent the residence time requirement of 12 consecutive months shall be deemed stationary.~~

"Supplier" means a person or firm that manufactures, assembles, or otherwise supplies generators.

"Testing" means determining the capability of a generator to meet the specified requirements of this regulation or determining if the generator and any ancillary equipment associated with its use are functioning correctly.

"US EPA" means the United States Environmental Protection Agency.

"Waste gas" means manufacturing or mining byproduct gases that are not used and are otherwise flared or incinerated. A manufacturing or mining byproduct is a material that is not one of the primary products of a particular manufacturing or mining operation, is a secondary and incidental product of the particular operation, and would not be solely and separately manufactured or mined by the particular manufacturing or mining operation. The term does not include an intermediate manufacturing or mining product which results from one of the steps in a manufacturing or mining process and is typically processed through the next step of the process within a short time.

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3.0 Emissions

A generator shall not exceed the following standards (in pounds per megawatt-hour (lbs/MWh) of electricity output) under full load design conditions or at the load conditions specified by the applicable testing methods.

3.1 Emergency generator.

3.1.1 Existing emergency generator. The owner or operator of an existing emergency generator shall operate the generator in conformance with the generator manufacturer's instructions, such as following maintenance and operating requirements to help minimize emissions.

3.1.2 New emergency generator. A new emergency generator shall meet the applicable emissions standards set by the US EPA: ~~for non-road engines (40 CFR 89, 90, 91, 92, 94, 1039, or 1048 July 1, 2004 Edition).~~

3.1.2.1 for non-road engines (40 CFR 89, 90, 91, 92, 94, 1039, or 1048 July 1, 2004 Edition) if the generator is installed on or after January 11, 2006 and before XX XX, 2011; or

3.1.2.2 in the New Source Performance Standards (NSPS) for internal combustion engines (40 CFR 60, Subparts IIII and Subparts JJJJ, July 1, 2011 Edition) if the generator is installed on or after XX XX, 2011.

3.2 Distributed generator. The following standards do not apply to distributed generators while operating to provide emergency electric power during an emergency.

3.2.1 Existing distributed generator.

3.2.1.1 Except as provided for in 3.2.1.2 of this regulation, an existing distributed generator shall meet the following emission standards:

Pollutant	**Emission Standard (lbs/MWh)**
Nitrogen Oxides	4.0
Nonmethane Hydrocarbons	1.9
Particulate Matter (liquid-fueled reciprocating engines only)	0.7
Carbon Monoxide	10.0
Carbon Dioxide	1,900

3.2.1.2 As an alternative to the owner of an existing distributed generator installed on commercial poultry producing premises, to generate electricity to those premises, the generator shall be exempt from the emission standards of 3.2.1.1 of this regulation if one of the following requirements are met:

3.2.1.2.1 the owner of such a generator is participating or is signed up to participate in a Department approved, emission control strategy cost-share program for generators offered by either the Kent Conservation District or the Sussex Conservation District; or

3.2.1.2.2 the generator is gaseous fueled.

3.2.2 New distributed generator.

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3.2.2.1 Except as provided for in 3.2.2.2 of this regulation, a new distributed generator shall meet the following emission standards:

	Emission Standards (lbs/MWh)		
Pollutant	Installed On or After ~~January 1, 2008~~January 11, 2006	Installed On or After January 1, 2008	Installed On or After January 1, 2012
Nitrogen Oxides	2.2	1.0	0.6
Nonmethane Hydrocarbons	0.5	0.5	0.3
Particulate Matter (liquid-fueled reciprocating engines only)	0.7	0.7	~~0.07~~0.044
Carbon Monoxide	10.0	10.0	2.0
Carbon Dioxide	1,900	1,900	1,650

3.2.2.2 A new distributed generator that uses waste, landfill, or digester gases shall be exempt from the emission standards of 3.2.2.1 of this regulation and shall meet the following emission standards:

Pollutant	**Emission Standards (lbs/MWh)**
	Installed on or After ~~January 1, 2008~~January 11, 2006
Nitrogen Oxides	2.2
Nonmethane Hydrocarbons	0.7
Carbon Monoxide	10.0
Carbon Dioxide	1,900

3.3 By January 11, 2010 the Department shall complete a review of the state of, and expected changes in, technology and emissions rates; as well as a review of generators operating within the State of Delaware, and their emissions. This review shall be used by the Department in considering whether these standards in this regulation should be amended, or new standards adopted, to ensure the continued improvement of the ambient air quality of the State of Delaware. Any amendment to these standards shall be in accordance with the requirements of **7 Del.C. Ch 60** and **29 Del.C. Ch 101**.

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4.0 Operating Requirements

4.1 An emergency generator may operate for an unlimited number of hours during an emergency.

4.2 An emergency generator may operate for an unlimited number of hours during testing or for maintenance purposes, pursuant to the definition of an emergency generator, except as restricted by 4.4 of this regulation.

4.3 A distributed generator may operate at any time, except as restricted by 4.4 of this regulation.

4.4 No emergency or distributed generator shall be used during testing or for maintenance purposes before 5 p.m. on a day which has a Ground Level Ozone Pollution Forecast or Particle Pollution Forecast of "Code Red" or "Code Orange" as announced by the Department.

4.5 Despite of this regulation, an emergency generator may be tested on any day that such testing is required to meet National Fire Protection Association (NFPA) or Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards.

4.6 An emergency generator may not be operated in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator. No operator shall utilize an emergency generator in a manner that is not in accordance with the definition of "emergency" in 2.0 of this regulation.

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5.0 Fuel Requirements

5.1 Each shipment of diesel fuel or a biodiesel blend, received for use in a generator on or after ~~April 11, 2006~~ XX XX, 2011, shall have a sulfur content equal to or less than ~~0.05~~0.0015% (15 ppm) by weight.

5.2 Gaseous fuels, except for natural gas, propane, waste, landfill, or digester gases, combusted in a generator on or after April 11, 2006 shall contain no more than ten grains total sulfur per 100 dry standard cubic feet (170 ppmv total sulfur) ~~on a daily average~~.

5.3 Waste, landfill, or digester gases combusted in a generator on or after April 11, 2006 shall contain no more than ten grains total sulfur per 100 dry standard cubic feet (170 ppmv total sulfur) on a daily average. An alternative total sulfur limit for waste, landfill, or digester gases shall be allowed based upon a case-by-case determination.

5.4 Natural gas combusted in a generator on or after April 11, 2006 shall meet the definition of "natural gas" or "pipeline natural gas" as these terms are defined by US EPA at 40 CFR 72.2 (July 1, 2011 Edition).

5.5 Propane combusted in a generator on or after April 11, 2006 shall meet the Gas Processors Association (GPA) Standard 2140-97 Liquefied Petroleum Gas Specification and Test Methods.

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6.0 Record Keeping and Reporting

6.1 Record-Keeping Requirements. The owner of a generator shall maintain the following records on the property where the generator is installed, or at such other readily accessible location that the Department approves in writing:

6.1.1 An owner shall monitor the monthly and yearly amounts of fuel, or fuels, consumed by their generators. Yearly fuel consumption shall be calculated and recorded each calendar month by recording (for each fuel) the current calendar month's fuel consumption and adding it to those of the previous eleven consecutive months.

6.1.2 A non-resettable hour metering device shall be used by an owner to continuously monitor the monthly and yearly operating hours for each of their generators. Yearly operating hours shall be calculated and recorded each calendar month by recording the current calendar month's operating hours and adding them to those of the previous eleven consecutive months.

6.1.3 Monthly and yearly operating hours for an emergency generator. Yearly operating hours during which testing or maintenance occurred shall be calculated and recorded each calendar month by recording the current calendar month's testing or maintenance hours and adding them to those of the previous eleven consecutive months. A brief description of each testing or maintenance performed shall also be recorded.

6.1.4 Except as provided for in 6.1.5 of this regulation, for each shipment of liquid fuel (other than liquefied petroleum gas), received for use in a generator, a shipping receipt and certification shall be obtained from the fuel distributor which identifies:

6.1.4.1 the type of fuel delivered; and

6.1.4.2 the percentage of sulfur in the fuel (by weight dry basis), and the method used to determine the sulfur content.

6.1.5 As an alternative to 6.1.4 of this regulation, the owner may have the fuel in the generator's fuel tank certified by a third party laboratory, after each shipment of liquid fuel. This certification shall identify:

6.1.5.1 the type of fuel delivered; and

6.1.5.2 the percentage of sulfur in the fuel (by weight dry basis), and the method used to determine the sulfur content.

6.2 Availability of Records. The owner shall maintain each record required by 6.1 of this regulation for a minimum of five years after the date the record is made. The owner may retain hard copies (e.g., paper) or electronic copies (e.g., compact discs, computer disks, magnetic tape, etc.) of the records. An owner shall promptly provide the original or a copy of a record or records to the Department upon request.

6.3 Annual Report Requirement for Curtailment Service Providers (CSPs)

6.3.1 A CSP that administers a voluntary demand-reduction program or any other interruptible power supply arrangement for a generator or generator owner in the State shall provide the following information to the Department in an annual report:

6.3.1.1 The name and address of each participating generator or generator owner, and the telephone number and name of a contact person;

6.3.1.2 The identification of each participating generator at a facility, including:

6.3.1.2.1 The serial number, rated engine capacity (in horsepower), and standby power rating (in kilowatts), of each generator;

6.3.1.2.2 The manufacturer and model;

6.3.1.2.3 The installation date;

6.3.1.2.4 The type of fuel used in each generator;

6.3.1.2.5 The PJM Interconnection, LLC utility zone for the participating facility;

6.3.1.3 A description of the voluntary demand-reduction program or other interruptible power supply arrangement for each participating generator, that is, the name of program and the company or organization operating the program in which the generator will be participating;

6.3.1.4 The dates upon which each generator was requested to operate during the year and the hours of operation on each date, including:

6.3.1.4.1 The reason for operating the generator under the voluntary demand-reduction program or other interruptible power supply arrangement;

6.3.1.4.2 The starting and ending times when each generator was requested to operate as called for by the CSP; and

6.3.1.4.3 The total kilowatt hours of generation during each operation for the voluntary demand-reduction program or other interruptible power supply arrangement;

6.3.1.5 A list of curtailment activities at each participating facility, the total hours and the total kilowatt hours of generation curtailment as called for by the CSP;

6.3.1.6 A brief description of any significant increase or decrease in the total hours of operation for the voluntary demand-reduction program or other interruptible power supply arrangement compared to total operation during the previous year; and

6.3.1.7 An attestation from the CSP that the CSP has:

6.3.1.7.1 Attempted to collect the required information from each participating facility or other appropriate source; and

6.3.1.7.2 Provided information that is true and correct to the best of their knowledge and is not misleading.

6.3.2 The annual report, including one hard copy and one electronic copy, shall be submitted to the Department by no later than April 1 of the following year, beginning April 1, 2012, for calendar year 2011.

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7.0 Emissions Certification, Compliance, and Enforcement

7.1 Emissions Certification of New Distributed Generators by a Supplier. A supplier may seek to certify that its generators, which are meant to be installed as new distributed generators, meet the provisions of this regulation.

7.1.1 Certification Process. Emissions of nitrogen oxides, nonmethane hydrocarbons, particulate matter, carbon monoxide, and carbon dioxide from the generator shall be certified in pounds of emissions per megawatt hour (lb/MWh) at International Organization for Standardization (ISO) conditions or at the load conditions specified by the applicable testing methods in ~~Emissions. Compliance with this regulation shall be demonstrated through testing using the applicable EPA Reference Methods, California~~

~~Air Resources Board methods, or equivalent test methods approved by the Department if:~~7.5.1 of this regulation. If the design of a certified generator is modified, the generator will need to be re-certified. Certification means that a generator meets the required emissions standards of this regulation and can be installed, as supplied, for use as a distributed generator. With respect to nitrogen oxides, nonmethane hydrocarbons, carbon monoxide, and carbon dioxide, test results from US EPA Reference Methods, California Air Resources Board methods, or equivalent testing may be used to verify this certification. When testing the output of particulate matter from liquid-fuel reciprocating engines, ISO Method 8178 shall be used. Test results shall be provided upon request to the Department. A statement attesting to certification shall be displayed on the nameplate of the unit or on a label attached to the unit with the following text:

This generator has met the standards defined by 7 **DE Admin. Code** 1144 and is certified as meeting applicable emission levels when it is maintained and operated in accordance with the supplier's instructions.

7.1.2 Responsibility of Supplier. Certification will apply to a specific make and model of generator. For a make and model of a generator to be certified, the supplier shall certify that the generator is capable of meeting the requirements of this regulation for the lesser of 3,000 hours of operation or five years.

7.2 Emissions Certification of New Emergency Generators by a Supplier. An engine that has been certified to meet the currently applicable US EPA non-road or NSPS emissions standards for internal combustion engines shall be deemed to be certified for use in new emergency generators.

7.3 Emissions Verification by an Owner. An owner shall verify, by each generator's respective compliance date as detailed in 1.3 of this regulation, that a generator complies with its respective emission requirements of 3.0 of this regulation by submitting any or all of the following types of data to the Department for review:

7.3.1 any emissions certification of a new distributed generator as detailed in 7.1 of this regulation;

7.3.2 any emissions certification of a new emergency generator as detailed in 7.2 of this regulation;

7.3.3 any maintenance or operating requirements/instructions provided by the generator manufacturer;

7.3.4 the type, or a description, of any emission control equipment used; or

7.3.5 emissions test data for the generator (such as a manufacturer's technical data sheet), any supporting documentation for any emission control equipment used, any supporting calculations, any quality control or assurance information, and any other information needed to demonstrate compliance with the requirements.

7.4 Reverification. To ensure continuing compliance with the emissions limitations, the owner or operator shall verify a distributed generator's compliance with the emission standards every five years. This verification may be accomplished by following a maintenance schedule that the manufacturer certifies will ensure continued compliance with the required standards, by third party testing of the distributed generator using appropriate test methods to demonstrate that the distributed generator still meets the required emission standards, or by some other means as proven to the Department.

7.5 Testing

7.5.1 Emissions. Compliance with this regulation shall be demonstrated through testing using the applicable US EPA Reference Methods including those specified in 40 CFR Parts 89, 90, 91, 92, 94, 1039, or 1048 (July 1, 2004 Edition) and 40 CFR Part 60, Subparts IIII and JJJJ (July 1, 2011 Edition), California Air Resources Board methods, or equivalent test methods approved by the Department or US EPA if:

7.5.1.1 a supplier is seeking to certify that one of its generators meets the provisions of this regulation, pursuant to 7.1 of this regulation;

7.5.1.2 an owner owns a generator that is not certified or verified under the terms of 3.1.2, 7.1, 7.2, or 7.3 of this regulation; or

7.5.1.3 an owner of a generator is seeking to reverify the generator via third party testing pursuant to 7.4 of this regulation.

7.5.2 Sulfur Content.

7.5.2.1 Sulfur limits pursuant to 5.1 of this regulation shall be determined using the applicable sampling and testing methodologies set forth in 40 CFR 80.580 (July 1, ~~2004~~2011).

7.5.2.2 Sulfur limits pursuant to 5.2, 5.3, 5.4, or 5.5 of this regulation shall be determined using the applicable sampling and testing methodologies set forth in the Gas Processors Association (GPA) Standard 2140-97 Liquefied Petroleum Gas Specification and Test Methods, Appendix D of 40 CFR 75 (July 1, 2004), or in the South Coast Air Quality Management District's Rule 431.1 "Sulfur Content of Gaseous Fuels" (June 12, 1998).

7.6 Duty to Comply. An owner or operator shall comply with the requirements of this regulation. Neither certification nor compliance with this regulation relieves owners or operators from compliance with any other applicable state and federal regulations or permitting requirements.

7.7 This regulation is enforceable by the Department as provided by law.

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8.0 Credit for Concurrent Emissions Reductions

8.1 Flared Fuels. If a generator uses fuel that would otherwise be flared (i.e., not used for generation or other energy related purpose), the emissions that were or would have been produced through the flaring can be deducted from the actual emissions of the generator, for the purposes of calculating compliance with the requirements of this regulation. If the actual emissions from flaring can be documented, they may be used as the basis for calculating the credit, subject to the approval of the Department. If the actual emissions from flaring cannot be documented, then the following default values shall be used:

Emissions	Waste, Landfill, Digester Gases
Nitrogen Oxides	0.1 lbs/MMBtu
Particulate Matter	N/A

Carbon Monoxide	0.7 lb/MMBtu
Carbon Dioxide	117 lb/MMBtu

8.2 Combined Heat and Power.

8.2.1 CHP installations shall meet the following requirements to be eligible for emissions credits related to thermal output:

8.2.1.1 At least 20% of the fuel's total recovered energy shall be thermal and at least 13% shall be electric. This corresponds to an allowed power-to-heat ratio range of between 4.0 and 0.15.

8.2.1.2 The design system efficiency shall be at least 55%.

8.2.2 A CHP system that meets the requirements of CHP installations shall meet the following requirements to be eligible for emissions credits related to thermal output: of this regulation may receive a compliance credit against its actual emissions based on the emissions that would have been created by a conventional separate system used to generate the same thermal output. The credit shall be subtracted from the actual generator emissions for purposes of calculating compliance with the limits in 3.1 or 3.2 of this regulation. The credit will be calculated according to the following assumptions and procedures:

8.2.2.1 The emission rates for CHP facilities that replace existing thermal systems (e.g., boiler) for which historic emission rates can be documented shall be the historic emission rates in lbs/MMBtu, but not more than the emission rates for new facilities that displace a thermal system, which are:

Emissions	**Maximum Rate**
Nitrogen Oxides	0.2 lbs/MMBtu
Particulate Matter	N/A
Carbon Monoxide	0.08 lbs/MMBtu
Carbon Dioxide	117 lbs/MMBtu

8.2.2.2 The emissions rate of the thermal system in lbs/MMBtu will be converted to an output-based rate by dividing by the thermal system efficiency. For new systems the efficiency of the avoided thermal system will be assumed to be 80% for boilers or the design efficiency of other process heat systems. If the design efficiency of the other process heat system cannot be documented, an efficiency of 80% will be assumed. For retrofit systems, the historic efficiency of the displaced thermal system can be used if that efficiency can be documented and if the displaced thermal system is either enforceably shut down and replaced by the CHP system, or if its operation is measurably and enforceably reduced by the operation of the CHP system.

8.2.2.3 The emissions per MMBtu of thermal energy output will be converted to emissions per MWh of thermal energy by multiplying by 3.413 $MMBtu/MWh_{thermal}$.

8.2.2.4 The emissions credits in lbs/$MWh_{thermal}$, as calculated in 8.2.2.3 of this regulation, will be converted to emissions in lbs/$MWh_{emissions}$ by dividing by the CHP system power-to-heat ratio.

8.2.2.5 The credit, as calculated in 8.2.2.4 of this regulation, will be subtracted from the actual emission rate of the CHP unit to produce the emission rate used for compliance purposes.

8.2.2.6 The mathematical calculations set out in 8.2.2.1 through 8.2.2.4 of this regulation are expressed in the following formula:

$$\text{Credit lbs/MWh}_{\text{emissions}} = \frac{\text{(boiler limit lbs/MMBtu)}}{\text{(boiler efficiency)}} \times \frac{3.413}{\text{(power to heat ratio)}} \qquad \text{(8-1)}$$

8.3 Non-Emitting Resources. When electricity generation that does not produce any of the emissions regulated herein is installed and operated simultaneously at the facility where the generator is installed and operated, then the electricity savings supplied by the non-emitting electricity source shall be added to the electricity supplied by the generator for the purposes of calculating compliance with the requirements of this regulation, subject to the approval of the Department and in accordance with the following formula for determining such savings:

$$\text{Rate}_{EF} = \text{Rate}_A \times \frac{\text{Size}_A}{\text{Size}_A + \text{Size}_{NER}} \qquad \text{(8-2)}$$

where
$Rate_{EF}$ = effective emission rate of generator, accounting for non-emitting resource or sources (lb/MWh);
$Rate_A$ = actual emission rate of generator alone (lb/MWh);
$Size_A$ = actual prime power rating of generator (MW);
$Size_{NER}$ = total generating capacity of non-emitting resource or sources (MW).

01/11/2006

9.0 DVFA Member Companies.

The provisions of 1.2.1.5 and 1.2.2 of this regulation apply to the following stations:

9.1 Aetna Hose, Hook & Ladder Company, Inc., Stations 7, 8, and 9

9.2 Belvedere Volunteer Fire Company, Station 30

9.3 Bethany Beach Volunteer Fire Company, Station 70

9.4 Blades Volunteer Fire Company, Station 71

9.5 Bowers Fire Company, Inc., Station 40

9.6 Brandywine Hundred Volunteer Fire Company No. 1, Station 11

9.7 Bridgeville Volunteer Fire Company, Station 72

9.8 Camden-Wyoming Volunteer Fire Company, Station 41

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9.9 Carlisle Fire Company, Station 42

9.10 Cheswold Volunteer Fire Company, Station 43

9.11 Christiana Fire Company, Stations 3, 6, and 12

9.12 Citizens' Hose Company, No. 1, Station 44

9.13 Claymont Fire Company, Station 13

9.14 Clayton Fire Company, No. 1, Station 45

9.15 Cranston Heights Fire Company, Station 14

9.16 Dagsboro Volunteer Fire Company, Station 73

9.17 Delaware City Fire Company, No. 1, Station 15

9.18 Delmar Volunteer Fire Company, Station 74

9.19 Dover Air Force Base Fire Department, Station 58

9.20 Ellendale Volunteer Fire Company, Station 75

9.21 Elsmere Fire Company, No. 1, Station 16

9.22 Farmington Volunteer Fire Company, Station 47

9.23 Felton Community Fire Company, Station 48

9.24 Five Points Fire Company, Station 17

9.25 Frankford Volunteer Fire Company, Station 76

9.26 Frederica Volunteer Fire Company, Station 49

9.27 Georgetown American Legion Ambulance Service, Station 93

9.28 Georgetown Volunteer Fire Company, Station 77

9.29 Good-will Fire Company, No. 1, Station 18

9.30 Greenwood Fire Company, No. 1, Station 78

9.31 Gumboro Volunteer Fire Company, Station 79

9.32 Harrington Fire Company, Station 50

9.33 Hartly Volunteer Fire Company, Station 51

9.34 Hockessin Volunteer Fire Company, Station 19

9.35 Holloway Terrace Volunteer Fire Company, No. 1, Station 20

9.36 Houston Volunteer Fire Company, Station 52

9.37 Indian River Volunteer Fire Company, Station 80

9.38 Laurel Fire Department, Station 81

9.39 Leipsic Volunteer Fire Company, Station 53

9.40 Lewes Volunteer Fire Company, Station 82

9.41 Little Creek Volunteer Fire Company, Station 54

9.42 Magnolia Volunteer Fire Company, Station 55

9.43 Marydel Volunteer Fire Company, Station 56

9.44 Memorial Volunteer Fire Company, Station 89

9.45 Mid Sussex Rescue Squad, Station 91

9.46 Mill Creek Fire Company, Stations 2 and 21

9.47 Millsboro Volunteer Fire Company, Station 83

9.48 Millville Volunteer Fire Company, Station 84

9.49 Milton Volunteer Fire Company, Station 85

9.50 Minquadale Fire Company, Station 22

9.51 Minquas Fire Company, No.1, Station 23

9.52 Odessa Fire Company, Stations 4 and 24

9.53 Port Penn Fire Company, Station 29

9.54 Rehoboth Beach Volunteer Fire Company, Station 86

9.55 Robbins Hose Company, No. 1, Station 46

9.56 Roxana Volunteer Fire Company, Station 90

9.57 Seaford Volunteer Fire Company, Station 87

9.58 Selbyville Volunteer Fire Company, Station 88

9.59 Smyrna-Clayton American Legion Ambulance, Station 64

9.60 South Bowers Beach Volunteer Fire Company, Station 57

9.61 Talleyville Volunteer Fire Company, Station 25

9.62 Townsend Fire Company, Inc., Station 26

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9.63 Volunteer Hose Company, Station 27

9.64 Wilmington Fire Department

9.65 Wilmington Manor Volunteer Fire Company, Stations 28 and 32.

9 DE Reg. 1084 (01/01/06)
12 DE Reg. 347 (09/01/08)